

Data Structures - 10110
CS 222 Section 01 Winter 2025
2:00 – 2:50 PM
Jamrich 3309 MWRF

Professor: Jason Haskell
Office: Jamrich 2223
Email: jhaskell@nmu.edu

Walk-in Office Hours: Monday, Wednesday, Thursday, and Friday 10:00-11:00am

By Appointment Only Office Hours: Thursday and Friday 11:00am-1:00pm

By appointment available in thirty-minute blocks on each hour and half hour. See ESP to make an appointment.

Text: No textbook will be used for this class. If students do not already have an IDE that supports C++ installed, students should go to <https://code.visualstudio.com/download> and download Visual Studio Code® for either PC or Mac. If you do not already have it installed, you should check out this video, following each step precisely, to get C++ to compile in Visual Studio Code® <https://www.youtube.com/watch?v=DMWD7wfhgNY>.

COURSE DESCRIPTION

This course covers data structures and algorithms in depth. Topics covered include arrays, stacks, queues, linked lists, trees and graphs, basic problem solving strategies and complexity analysis, sorting and searching algorithms, hashing techniques, and some advanced tree structures (e.g., AVL trees, B and B+ trees, splay trees, etc.).

Prerequisite: CS 201

Course Learning Outcomes

1. Be able to create, sort, and search:
 - a. Arrays
 - b. Stacks
 - c. Queues
 - d. Linked lists
 - e. Various trees
2. Understand the concept of Big O notation and derive the Big O notation based on an algorithm and its accompanying data structure
3. Become proficient at programming independently from design to implementation
4. Develop strong commenting and debugging habits
5. Match algorithms and data structures to process input efficiently
6. Become comfortable using hashing techniques
7. Demonstrate proficiency using recursion in algorithms

Assessment Format: Specific information on each assessment is below.

- **Programming Assignments (40%):** There will be four major programming assignments throughout the semester.
- **Quizzes (10%):** This class will have a quiz nearly every day. The quizzes will be used as a check to see how students are internalizing the concepts taught in class.
- **Exams (20%, 2 total):** Each exam will consist of questions from the material discussed in class. A university-approved excuse is generally a prerequisite for rescheduling any test. All exams will be taken in class. Additional instructions will be provided prior to each exam.
- **Final Exam (30%):** The final exam is a comprehensive exam covering the entire course. The final exam will be on **Monday, April 28th, at 2:00pm.**

Grading Scale (%): Students' course grade will be weighted according to the percentages outlined under Assessment Format. Corresponding grades based on a percentage are below.

100 – 93%	A	76 – 73%	C
92 – 90%	A-	72 – 70%	C-
89 – 87%	B+	69 – 67%	D+
86 – 83%	B	66 – 63%	D
82 – 80%	B-	62 – 60%	D-
79 – 77%	C+	59 – 0%	F

Use of AI Writing Tools:

AI writing tools like ChatGPT are considered supplementary aids and should not replace students' original ideas and research. Usage of AI tools for assignments must be pre-approved to ensure academic honesty. Unauthorized use can impact students' academic standing. It is essential to clearly distinguish between students' original work and the content generated by AI in any submissions. Violating these guidelines equates to infringing NMU's [Academic Dishonesty Policy](#).

Anyone caught cheating will receive a zero for the assignment and an F for the class.

How do I get help in the class?

1. See me during office hours or set up an appointment.
2. Visit the CS tutor in Jamrich 2311, see schedule on EduCat.
2. Meet up with a peer from the class.
3. Go to All Campus Tutoring (generally available on the weekends). Check their walk-in tutoring schedule at <https://www.nmu.edu/tutoring/>.

NMU's Non-Discrimination Statement:

Northern Michigan University does not unlawfully discriminate on the basis of race, color, religion, sex, national origin, age, height, weight, marital status, familial status, handicap/disability, sexual orientation, or veteran status in employment or the provision of services, and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities an equal opportunity to participate in all programs and activities.

Anyone having civil rights inquiries may contact the Equal Opportunity Office, 502 Cohodas Hall, telephone number 906-227-2420.

ADA Statement:

If you have a need for disability-related accommodations or services, please inform the Coordinators of Disability Services in the Dean of Students Office at 2001 C. B. Hedgcock Building (906-227-1737 or disability@nmu.edu). Reasonable and effective accommodations and services will be provided to students if requests are made in a timely manner, with appropriate documentation, in accordance with federal, state, and university guidelines.

Subject to change with notice.